

Serial No. 09/421,434
April 2, 2003
Page 7 of 14

REMARKS

Claims 1 and 3-20 are pending in this application. By this Amendment, Applicant AMENDS claims 1 and 14 and the Specification.

The Specification was objected to for failing to provide antecedent basis for the feature of "completing manufacturing of the piezoelectric transformer apparatus" of originally filed claim 14. The Examiner is absolutely wrong because the originally filed Specification clearly disclosed this feature and originally filed claim 14 clearly recited this feature.

The Examiner is pointed to the paragraph bridging pages 12 and 13 of the originally filed Specification. The originally filed Specification clearly discloses that the method of present invention is performed such that "the maximum vibration velocity is selected so that there is enough time left for the manufacturing steps which are performed after the screening process." That is, the originally filed Specification clearly supports the feature of "completing manufacturing of the piezoelectric transformer apparatus" after the step of screening, as recited in Applicant's claims 1 and 14.

Accordingly, the objection to the Specification must be withdrawn.

Claims 1 and 3-14 were rejected under 35 U.S.C. §112, first paragraph, as allegedly containing subject matter that was not described in the Specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The Examiner has alleged that the feature of "completing the manufacture of the piezoelectric transformer apparatus" recited in Applicant's claims 1 and 14 is new matter. The Examiner is clearly wrong.

As noted above, the paragraph bridging pages 12 and 13 of the Specification as originally filed clearly provides support for this feature. Further, as noted by the Examiner, originally filed claim 14 recites this feature. Thus, the recitation of the step of "completing the manufacture of the piezoelectric transformer" is NOT new matter and is clearly and definitely supported by the original disclosure.

Th Examiner also alleg d that the Specification does not provide support for the

Serial No. 09/421,434

April 2, 2003

Page 8 of 14

recitation of "completing the manufacture of the piezoelectric transformer apparatus" because the "specification does not even make any stipulation as to what state the piezoelectric transformer is in when it is considered to be completed." This is not correct.

The steps of manufacturing a piezoelectric transformer apparatus are well known to one of ordinary skill in the art as disclosed in U.S. Patent No. 5,894,185 or U.S. Patent No. 5,949,179, and thus, do not constitute novel features of the present invention. The unique characteristics and timing of performing the screening process constitute the novel features of the present invention. It is well settled law that an applicant for a patent is not required to describe that which is old and well known. Nevertheless, Applicant's Specification describes in the Description of the Related Art and the Detailed Description of Preferred Embodiments the steps required to manufacture a piezoelectric transformer according to known methods. Moreover, Applicant's Specification clearly discloses what steps of the known piezoelectric transformer manufacturing process are performed just before the novel screening step, and how and when to perform the novel screening step. Also, Applicant's Specification discloses completing the manufacturing process according to well known methods of manufacturing a piezoelectric transformer apparatus. Thus, one of ordinary skill in the art would have known what steps are required to be performed after Applicant's unique screening process has been performed.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1 and 3-14 under 35 U.S.C. §112, first paragraph.

Claims 1, 3, and 10-17 were rejected under 35 USC § 102(b) as being anticipated by Saitoh et al. (U.S. Patent No. 5,295,487). Claims 1 and 3-20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the IEEE publication to Kawamura et al. in view of Allen et al. (U.S. Patent No. 5,701,645). Applicant respectfully traverses the rejections of claims 1-3 and 20.

Claim 1 has been amended to recite:

Serial No. 09/421,434

April 2, 2003

Page 9 of 14

"A method for manufacturing and screening a piezoelectric transformer apparatus including a piezoelectric member having an actuator and a generator provided in the piezoelectric member, the method comprising the steps of:

beginning manufacturing of the piezoelectric transformer apparatus;
connecting a load impedance to said generator;
applying a stress signal to said actuator to vibrate the piezoelectric transformer apparatus;
identifying whether the transformer apparatus has a mechanical latent defect; and

completing the manufacture of the piezoelectric transformer apparatus after the step of identifying whether the transformer apparatus has the mechanical latent defect and before the piezoelectric transformer apparatus is assembled into an electronic device." (emphasis added)

Applicant's claim 14 has been amended to recite:

"A method of manufacturing a piezoelectric transformer apparatus including a piezoelectric member having an actuator and a generator provided in the piezoelectric member, the method comprising the steps of:

beginning manufacturing of the piezoelectric transformer apparatus;
testing the piezoelectric transformer apparatus for mechanical latent defects; and

completing manufacturing of the piezoelectric transformer apparatus before the piezoelectric transformer apparatus is assembled into an electronic device." (emphasis added)

The originally filed Specification discloses in the first paragraph on page 1 that the piezoelectric transformer apparatus is used in and installed in various electronic devices, including a liquid crystal display backlight inverter, a fluorescent lamp lighting inverter, a DC-DC converter, and an AC adapter. As noted above, the screening step or process is performed before completion of the manufacturing of the piezoelectric transformer apparatus and before using or installing the completed piezoelectric transformer apparatus in an electronic device such as a liquid crystal display backlight inverter, a fluorescent lamp lighting inverter, a DC-DC converter, and an AC adapter.

Applicant's claim 1 recites the feature of "a piezoelectric transformer apparatus,"

Serial No. 09/421,434

April 2, 2003

Page 10 of 14

and "completing the manufacture of the piezoelectric transformer apparatus after the step of identifying whether the transformer apparatus has the mechanical latent defect and before the piezoelectric transformer apparatus is assembled into an electronic device." Applicant's claim 14 recites the feature of "a piezoelectric transformer apparatus" and "completing manufacturing of the piezoelectric transformer apparatus before the piezoelectric transformer apparatus is assembled into an electronic device." The prior art completely fails to teach or suggest any of these claimed features.

Applicant agrees with the Examiner that Saitoh et al. shows a piezoelectric device. However, Saitoh et al. teaches a piezoelectric transmitting/receiving element used in an ultrasonic probe, NOT the use of a piezoelectric transformer as recited in Applicant's claims 1 and 14. The Examiner is entitled to give claims their broadest reasonable interpretation consistent with the specification. See MPEP § 2111. However, the Examiner's interpretation of the recited phrase "piezoelectric transformer" as including a piezoelectric transmitting/receiving element used in the ultrasonic probe of Saitoh et al. is both unreasonable and inconsistent with the ordinary and accepted meaning of the phrase "piezoelectric transformer" and is inconsistent with the Applicant's disclosure.

The Examiner is reminded that the words of the claim must be given their plain meaning unless Applicant has provided a clear definition in the specification. See In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) and MPEP § 2111.01. The Examiner is alleging that because the piezoelectric transmitting/receiving element of Saitoh et al. is a piezoelectric element that transmits and receives acoustic signals, Saitoh et al. teaches a piezoelectric transformer. However, the Examiner cannot ignore the plain and ordinary meaning of the phrase "piezoelectric transformer."

Both the plain meaning and the Applicant's meaning of the phrase piezoelectric transformer is "a piezoelectric body which has an electrical signal input for causing mechanical vibrations in the piezoelectric body and which has an electrical signal output

Serial No. 09/421,434

April 2, 2003

Page 11 of 14

for supplying a voltage of a desired level" (see attached U.S. Patent No. 6,417,603, lines 30-43 of column 1). The Examiner's interpretation of the piezoelectric transmitting/receiving element used in the ultrasonic probe of Saitoh et al. as constituting a transformer is repugnant to both the plain meaning and Applicant's meaning of this term. The piezoelectric transmitting and receiving element of the ultrasonic probe of Saitoh et al. clearly cannot be considered a piezoelectric transformer because the piezoelectric transmitting/receiving element of Saitoh et al. does not teach or suggest an electrical signal output for supplying a voltage of a desired level. The whole point of a piezoelectric transformer is to output a voltage of a certain level to continuously supply another electrical device, e.g. a liquid crystal display backlight inverter, a fluorescent lamp lighting inverter, a DC-DC converter, and an AC adapter, to ensure the proper working of the electronic device. One of ordinary skill in the art would clearly recognize that the transmitting and receiving element of the ultrasonic probe of Saitoh et al. cannot be used to continuously supply a voltage of a desired level.

Simply put, Saitoh et al. does not teach anything even remotely close to a piezoelectric transformer and cannot in any way be considered to constitute a piezoelectric transformer.

Finally, Saitoh et al. clearly fails to teach or suggest the feature of "completing the manufacture of the piezoelectric transformer apparatus after the step of identifying whether the transformer apparatus has the mechanical latent defect and before the piezoelectric transformer apparatus is assembled into an electronic device" as recited in Applicant's claim 1 or the feature of "completing manufacturing of the piezoelectric transformer apparatus before the piezoelectric transformer apparatus is assembled into an electronic device" as recited in Applicant's claim 14. The Examiner has alleged that lines 39-56 of column 20 of Saitoh et al. teaches this feature. However, the test preformed by Saitoh et al. clearly is not intended to be used in the manufacturing process of the ultrasonic probe because the tests are (1) conducted clearly after the manufacture of the ultrasonic probe has been completed; and (2) performed for 1,000

Serial No. 09/421,434

April 2, 2003

Page 12 of 14

hours and 3,000 hours.

Saitoh et al. clearly teaches that the manufacture of the piezoelectric transmitting/receiving element is first completed, then the completed piezoelectric transmitting/receiving element is installed in an ultrasonic probe, and then the manufacture of the ultrasonic probe is completed, ALL before the testing is performed. This is clearly contrary and totally different from Applicant's claimed invention.

In addition, it is abundantly clear that the testing performed in Saitoh et al. is lifecycle testing to determine the durability and lifespan of the ultrasonic probe. It is beyond all logic and reason to conclude that one of ordinary skill in the art would have used this test during the manufacture of the ultrasonic probe because of the length and purpose of testing.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 1 under 35 USC § 102(b) as being anticipated by Saitoh et al.

Applicant agrees with the Examiner that Kawamura et al. and Allen et al. show piezoelectric devices. However, neither Kawamura et al. nor Allen et al. teach or suggest the use of a piezoelectric transformer. As noted above, the Examiner is entitled to give claims their broadest reasonable interpretation consistent with the specification. See MPEP § 2111. However, neither the piezoelectric transducer of Kawamura et al. nor the surface acoustic wave device of Allen et al. can reasonably be interpreted to be a piezoelectric transformer as recited in Applicant's claims 1 and 14.

Further, the Examiner has alleged that it would have been obvious to modify Kawamura et al. in view of Allen et al. "to positively manufacture multiple piezoelectric transformer apparatuses at one time and identify and remove any defective transformer apparatuses from the manufacturing process" (second paragraph on page 6 of the Office Action). First, as discussed above, neither Kawamura et al. and Allen et al. teaches or suggests piezoelectric transformers. Second, Kawamura et al. and Allen et al. are in different fields of endeavors. Kawamura et al. is directed to high voltage sensors, and Allen et al. is directed to surface acoustic wave devices. Finally, Applicant

Serial No. 09/421,434

April 2, 2003

Page 13 of 14

is completely bewildered as to why one of ordinary skill in the art would have combined Kawamura et al. and Allen et al. "to positively manufacture multiple piezoelectric transformer apparatuses at one time and identify and remove any defective transformer apparatuses from the manufacturing process" because neither Kawamura et al. nor Allen et al. teaches or suggests anything at all about manufacturing piezoelectric transformers.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1 and 14 under 35 U.S.C. §103(a) as being unpatentable over the Kawamura et al. in view of Allen et al.

Accordingly, Applicant respectfully submits that Saitoh et al., Kawamura et al., and Allen et al., applied alone or in combination, fail to teach or suggest the unique combination and arrangement of elements recited in claims 1 and 14 of the present application. Claims 2-13 depend upon claim 1 and are therefore allowable for at least the reasons that claim 1 is allowable. Claims 15-20 depend upon claim 14 and are therefore allowable for at least the reasons that claim 14 is allowable.

In view of the foregoing amendments and remarks, Applicant respectfully submits that this application is in condition for allowance. Favorable consideration and prompt allowance are solicited.

To the extent necessary, Applicant petitions the Commissioner for a One-month extension of time, extending to April 30, 2003, the period for response to the Office Action dated December 31, 2002.

Serial No. 09/421,434
April 2, 2003
Page 14 of 14

The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1353.

Respectfully submitted,

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